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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/645,570	08/22/2003	Shori Mokuo	33082M170	3867
441	7590	12/04/2006	EXAMINER	
SMITH, GAMBRELL & RUSSELL 1850 M STREET, N.W., SUITE 800 WASHINGTON, DC 20036			PATEL, RITA RAMESH	
		ART UNIT	PAPER NUMBER	
		1746		

DATE MAILED: 12/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/645,570	MOKUO, SHORI
	Examiner	Art Unit
	Rita R. Patel	1746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 18 September 2006.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 2-18 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 2-18 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date <u>9/18/06</u>	6) <input type="checkbox"/> Other: _____

DETAILED ACTION

Response to Applicant's Arguments / Amendments

This Office Action is responsive to the amendment filed on 9/18/06. Claim 1 has been canceled. Claims 2-18 are pending. Claims 2, 4, 5-7, 10, 15-16, and 18 have been amended. Applicant's arguments have been considered, but are not persuasive. Based on amendments made, a new grounds of rejection has been made and thus claims 2-16 are finally rejected for the reasons of record.

Objections over disclosure and claims 4-6 are withdrawn due to amendment of "baffleplate" to --baffle plate--.

Objections to claims 16 and 17 are withdrawn due to grammatical amendments made by applicant.

Furthermore, applicant argues on page 17 of Remarks (lines 21-24) that the Kolbusz reference does not teach or an inner cylinder centrally disposed in the processing tank and a cylindrical straightening vane which is disposed between a cylindrical wall of the processing liquid tank and a centrally disposed inner cylinder; however, Kolbusz's tank 11 and the outer wall of the interconnecting duct 23 reads on applicant's processing tank, inner chamber 17 reads on applicant's inner cylinder, and outer wall 21 of chamber-interconnecting duct reads on applicant's claims for a straightening vane disposed between the outer tank and inner cylinder.

Applicant further notes on page 18 (lines 5-6) that the cylindrical straightening vane recited in amended claim 2 is different from the chamber interconnecting duct 23

disclosed in Kolbusz, and this is noted by the Examiner, therefore, the clarification is made that the outer wall 21 of the interconnecting duct 23 reads specifically on applicant's claim for a cylindrical straightening vane. As seen by Figure 4 of Kolbusz, the walls of the invention are cylindrically formed around each other in a concentric form, thus it can be envisaged that wall 21 is similarly cylindrical in nature as shown by the aerial view of the concentric outer tank wall 11.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2- 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kolbusz et al. herein referred to as "Kolbusz" (US Patent No. 6,427,638).

Kolbusz illustrates in Figures 1-4 a water heater apparatus 10 generally comprising a tank 11 having a plurality of heat transferring chambers 17, 18 and ducts 22-24 being conventionally disposed inside said tank. The heat transferring chambers 17, 18 include an inner chamber 17, and outer chamber 18 being separated from the inner chamber with an inner wall structure 20. Additionally, the upper portion 15 is separated from the lower portion 16 with a partition 25 having a plurality of ports 26 disposed therethrough (col. 3, lines 45-55). Partition 25 of Kolbusz reads on applicant's claim for a baffle plate; "Tubes pass through this plate for support. Provides a blocked

path for the shell-side medium, forcing the medium across the tubes for better heat exchanger performance." ("baffle plate". Heat Exchanger (2005). Retrieved 10 May 2006, from <http://www.heatexchargetypes.com/glossary.htm>). Chamber-interconnecting duct 23 is disposed through a top of the inner wall structure 20 and extends along an outer wall 21 of the outer chamber 18 and through a bottom of the outer wall 21 and into the outer chamber 18 (col. 3, lines 60-64). In Figure 1 of Kolbusz, the coiled pipes 27-30 are illustratively arranged parallel to one another. It is the intended use of coiled pipes 27-30 to be used for flowing either a cooling heat medium or a heating heat medium inside; the pipes are structurally capable of flowing either therein. It is well settled that the intended use of a claimed apparatus is not germane to the issue of the patentability of the claimed structure. If the prior art structure is capable of performing the claimed use then it meets the claim. *In re Casey*, 152 USPQ 235, 238 (CCPA 1967); *In re Otto*, 136 USPA 459 (CPA 1963). The bottom of the tank, where the flow of liquid from chamber-interconnecting duct 23 is received, is closed by surrounding walls 12, 14 and is capable of storing liquid therein. It is an inherent effect of the invention of Kolbusz that the temperature of the liquid within chamber 17 is adjusted to achieve desired heating/cooling by way of the heat medium passing through pipes 27-30 (col. 4, lines 14-16).

Kolbusz's tank 11 and the outer wall of the interconnecting duct 23 reads on applicant's processing tank; inner chamber 17 reads on applicant's inner cylinder; and outer wall 21 of chamber-interconnecting duct reads on applicant's claims for a straightening vane disposed between the outer tank and inner cylinder

Kolbusz's disclosure of outer wall 21 reads on applicant's claim for a *cylindrical* straightening vane. Although not explicitly stated to be cylindrical Kolbusz teaches that "it is to be realized that the optimum dimensional relationships for the parts of the invention, to include variations in size, materials, shape, form, function and manner of operation, assembly and use, are deemed readily apparent and obvious to one skilled in the art" (col. 4, lines 53-58), hence, cylindrical shape would have been obvious, as it achieves the same functions for providing liquid flow therein. Moreover, as seen by Figure 4 of Kolbusz, the walls of the invention are cylindrically formed around each other in a concentric form, thus it can be envisaged that wall 21 is similarly cylindrical in nature as shown by the aerial view of the concentric outer tank wall 11.

Also, flow of pipes 27-30 flow by and large horizontally, as the processing liquid flows through the tank mostly vertically.

Outlet ports 26 as shown in Figure 3 of Kolbusz, draw the processing fluid out from below partition 25 out of a region outer of the chamber-interconnecting duct 23 without mixing fluid transported in the ports with the processing liquid above the partition 25, thus reading on applicant's claim for an outlet pipe for drawing the processing liquid below the baffle plate out of a region inner or outer of the straightening vane without mixing the processing liquid below the baffle plate with the processing liquid upper of the baffle plate.

Chamber-interconnecting duct 23 of Kolbusz is fixed to partition 25 by way of tank 25 walls. Moreover, rearrangement of parts was held to have been obvious. *In re Japikse* 86 USPQ 10 (CCPA 1950). Thus providing reading on Kolbusz scope for said

invention, however also providing obvious variants. This reads on applicant's claim wherein the baffle plate is fixed to the baffle plate. Kolbusz supports that optimal dimensional relationships for the parts of said invention are obvious variants that one of ordinary skill in the art at the time of the invention would find readily apparent (col. 4, lines 53-58). Hence, a tilted baffle plate is deemed to be an obvious variant, as a tilted baffle maintains to achieve the same functions as that of a non-tilted baffle plate.

As seen in Figure 3, coiled pipes 27-30 are shown traversing in a helical shaped in region outer of the chamber-interconnecting duct 23. It would have been obvious to one of ordinary skill in the art at the time of the invention to rearrange the helical coils taught by Kolbusz to traverse within the region of the inner-connecting duct 23 to achieve increased heating/cooling functions of the processing unit. Rearrangement of parts was held to have been obvious. *In re Japikse* 86 USPQ 10 (CCPA 1950).

It would have been obvious to one of ordinary skill in the art at the time of the invention to compose the liquid contact surfaces of the processing liquid tank and the pipe of a chemical liquid resistant resin, as claimed by applicant, to prevent chemical erosion or unwanted chemical reactions (col. 4, lines 53-58); Kolbusz finds this feature to be readily apparent by one of ordinary skill in the art at the time of the invention.

Furthermore, in Figure 2, Kolbusz shows the water heater apparatus with a tank disposed therein, connectively attached to another unit by water outlet pipe 30 and exhaust pipe 39; these two apparatuses form a processing unit for processing, in which water inlet pipe 29 is attached thereupon. It would have been obvious to one of ordinary skill in the art at the time of the invention to adjoin said water heater apparatus

to a processing unit to achieve intended processing for the inlet or outlet stream of the water heater. Processing functions are commonly known in the art for providing, but not limited to, further heating, cooling, supplying, routing, partitioning, filtration, remediation and/or mixing means.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Tam (US Patent No. 5,228,413) teaches a multiple boiler with separate heating systems incorporated therein that require heating to occur in a heat exchange relationship with water in the tank. Tank 12 has an inlet 16 and outlet 18; disposed therein are baffle 25 and circulating coil 40.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rita R. Patel whose telephone number is (571) 272-8701. The examiner can normally be reached on M-F: 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571) 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RRP



MICHAEL BARR
SUPERVISORY PATENT EXAMINER